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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/846,432

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EXAMINER

PAIK, SANG YEOP

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 04/30/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/846,432

Applicant(s)

BENJAMIN ET AL.

Examiner

Sang Y Paik

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 33-38 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-11 and 33-38 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, there is no proper antecedent basis for "said thermal conductor".

In claim 4, there is no proper antecedent basis for "the thermal insulator".

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kholodenko et al (US 6,310,755) in view of Kuibira et al (US 6,365,879).

Kholodenko et al show a chuck for plasma processor having a temperature controlled base (190), a flat support made of non-electrically conductive material for holding a work-piece (175), the flat support bonded to the base with an insulation layer (295), a heater embedded in the flat support, and a thermal conductor such as helium gas provided between the flat support and the work-piece. However, Kholodenko et al does not disclose that the insulator layer is a thermal insulation material having the thermal conductivity of less than about 1 W/mK.

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Kuibira et al shows a thermal insulation material that has the thermal conductivity of 10W/mK or less. Kuibira et al further teaches that the insulator having such thermal conductivity prevent heat loss toward the back side of the heating surface. It would have been obvious to one of ordinary skill in the art to adapt Kholodenko et al with the thermal insulator shown by Kuibira et al in place of the insulation layer (295) to thermally insulate the flat support and prevent undesired heat loss through the back side of the support.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kholodenko et al in view of Kuibira et al as applied to claims 1-3 and 11 above, and further in view of Furuya et al (US 6,084,215).

Kholodenko et al in view of Kuibira et al shows the structure claimed except the thermal insulator comprising a polymer.

Furuya et al shows a thermal insulation material made of polymer plastic material that bonds a flat support having a heater embedded therein with a temperature controlled base. In view of Furuya et al, it would have been obvious to one of ordinary skill in the art to adapt Kholodenko et al, as modified by Kuibira et al, with the thermal insulator made of polymer as an alternative material to thermally insulate the heating flat support.

6. Claims 5-9 and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kholodenko et al in view of Kuibira et al as applied to claims 1-3 and 11 above, and further in view of Mahawili (US 5,059,770) or Carman et al (US 5,294,778)

Kholodenko et al in view of Kuibira et al discloses all the structure and method claimed except the heater having a plurality of planar heating elements.

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Mahawili or Carman et al shows a work-piece heating apparatus having a plurality of heating elements with a plurality of sensor that are independently controlled to measure the respective heating zones. In view of Mahawili or Carman et al, it would have been obvious to one of ordinary skill in the art to adapt Kholodenko et al, as modified by Kuibira et al, with a plurality of heating elements and sensors to control the respective heating zones to achieve the desired heating temperature across the heating plate.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kholodenko et al in view of Kuibira et al as applied to claims 1-3 and 11 above, and further in view of Weber (US 4,518,848).

Kholodenko et al in view of Kuibira et al discloses all the structure claimed except the heater being an etched foil.

Weber shows an electric heating element in the formed of an etched foil. In view of Weber, it would have been obvious to one of ordinary skill in the art to adapt Kholodenko et al, as modified by Kuibira et al, with an etched foil as an alternative heating formation to provide for the heating element on a heating plate to produce the desired high temperature and uniform heating across the heating plate.

#### ***Response to Arguments***

8. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (6:30-4:00) First Friday Off.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Paik

Sang Y Paik  
Primary Examiner  
Art Unit 3742

syp